

### **Claims**

5        1. A park brake system for vehicles comprising:  
an actuator with an electric drive motor and an electronic control unit,  
a reduction gear having an input connected to the output of the electric motor  
and a pull force output member for connection to mechanical brakes of the  
vehicle, and  
0            a command unit connected to said electronic control unit;  
wherein said reduction gear comprises a first reduction train and a second  
reduction train, the first reduction train including a worm gear and the second  
reduction train including a threaded spindle and a screw nut engaged with said  
spindle, said worm gear connecting said spindle to the output of said electric  
motor, and said pull force output member being connected to the screw nut.  
5        2. The park brake system of claim 1, wherein said pull force output member is  
connected to said screw nut through a flexible traction member deflected by a  
pulley.  
0        3. The park brake system of claim 2, wherein said pull force output member is  
adapted for connection to a brake cable.  
5        4. The park brake system of claim 1, wherein the pull force output member is  
a pivotally mounted two-armed lever having a first arm connected to said  
screw nut and a second arm adapted for connection to a brake cable.  
0        5. The park brake system of any of claims 1 to 4, wherein said electric drive  
motor is a high torque brushless DC motor.  
0        6. The park brake system of any of claims 1 to 5, comprising a common  
carrier with a base wall mounting said drive motor and said spindle.

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7. The park brake system of claim 6, wherein said base wall is integrally molded with a tubular mounting structure for said spindle and for said screw nut.

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8. The park brake system of claim 7, wherein said base wall is integrally molded with a tubular mounting structure for the rotor of said electric drive motor.

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9. The park brake system of claim 6, wherein said drive motor and reduction gear are mounted on opposite sides of said base wall.

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10. The park brake system of any of claims 1 to 9, wherein said electric drive motor has an outer rotor and a removable cover is fitted over said rotor.

11. The park brake system of any of claims 1 to 10, wherein said command unit comprises an electric switch, a pull grip for operating said switch, a latch mechanism for latching the pull grip in an actuated position and a release key to disengage the latch mechanism.

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12. The park brake system of claim 11, wherein said pull grip is spring-loaded to a normal released position by a spring mechanism that provides a haptic feedback to an operator on movement of the pull grip to the actuated position.

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